Access DB# 84585

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: DAWN GARRETT Examiner #: 76107 Date: 1/16/2003
Art Unit: 1774 Phone Number 30 5-0788 Serial Number: 09/935,711
Mail Box and Bldg/Room Location: CP3-11D30 Results Format Preferred (circle): PAPER DISK E-MAIL
(or Mailbox CP3-11D03)

If mor than one search is submitted, please prioritize searches in order of need.

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Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: LIGHT-EMITTING DEVICE AND MATERIAL THEREFOR

Inventors (please provide full names): HISASHI OKADA, TOSHIHIRO ISE, MASAYUKI MISHIMA, TOSHIKI TAGUCHI

Earliest Priority Filing Date: JP 2000-254171 (8/24/2000), JP 2001-038718 (2/15/01), JP 2001-236419 (8/3/01)

**For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

Please search attached compound (D) used in a light-emitting (electroluminescent) device

Ar^D is an arylene group

R^{D1} and R^{D2} are hydrogens

n^D is 3

m^D is 5

m' is 1

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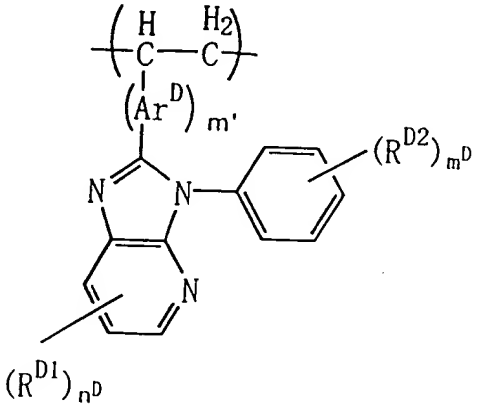
STAFF USE ONLY	Type of Search		Vendors and cost where applicable	
Searcher: EA	NA Sequence (#)		STN	$166.93
Searcher Phone #:	AA Sequence (#)		Dialog	
Searcher Location:	Structure (#)	(1)	Questel/Orbit	
Date Searcher Picked Up:	Bibliographic	(and)	DrInk	
Date Completed: 1-17-03	Litigation		Lexis/Nexis	
Searcher Prep & Review Time: 5	Fulltext		Sequence Systems	
~~Clerical Prep Time:~~	Patent Family		WWW/Internet	
Online Time: 50	Other		Other (specify)	

PTO-1590 (8-01)

$(R^{D1})_{n^D}$

wherein Ar^D represents an arylene group or a divalent heterocyclic group; R^{D1} and R^{D2} each independently represent a hydrogen atom or a substituent; n^D represents an integer of 0 to 3; and m^D represents an integer of 0 to 5.

6. The light-emitting device according to claim 1, wherein the heterocyclic compound is a polymer comprising a repeating unit represented by formula (D):



(D)

wherein Ar^D represents an arylene group or a divalent heterocyclic group; R^{D1} and R^{D2} each independently represent a hydrogen atom or a substituent; n^D represents an integer of 0 to 3; m^D represents an integer of 0 to 5; and m' represents 0 or 1.

7. The light-emitting device according to claim 6, wherein the substituent is a group selected from the group consisting of an alkyl group, an alkenyl group, an alkynyl group, an aryl group, an alkoxy group, an aryloxy group, an acyl group, a halogen atom, a cyano group, a heterocyclic group, and a silyl group.

8. A polymer comprising a repeating unit represented by formula (E-1):

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     FILE 'LREGISTRY'
L1                STR

     FILE 'REGISTRY'
L2                SCR 2043
L3              0 S L1 AND L2

     FILE 'LREGISTRY'
L4                STR L1

     FILE 'REGISTRY'
L5              0 S L4 AND L2
L6              0 S L4

     FILE 'LREGISTRY'
L7                STR L4

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L8              0 S L7 AND L2
L9             13 S L7
L10           365 S L7 FUL
                  SAV L10 GAR401/A
L11             6 S L10 AND PMS/CI

     FILE 'CAOLD'
L12             0 S L11

     FILE 'ZCAPLUS'
L13             1 S L11

     FILE 'HCAPLUS'
L14             1 S L11
L15            13 S L10
L16         79141 S LIGHT?(2A)(EMIT? OR EMISSION?) OR LED/IT OR L(W)E(W)D O
L17             1 S L15 AND L16
L18             1 S L14 OR L17
L19        498597 S PHOSPHORES? OR LUMINES? OR FLUORES?
L20             1 S L15 AND L19
L21             1 S L14 OR L17 OR L18 OR L20

     FILE 'REGISTRY'
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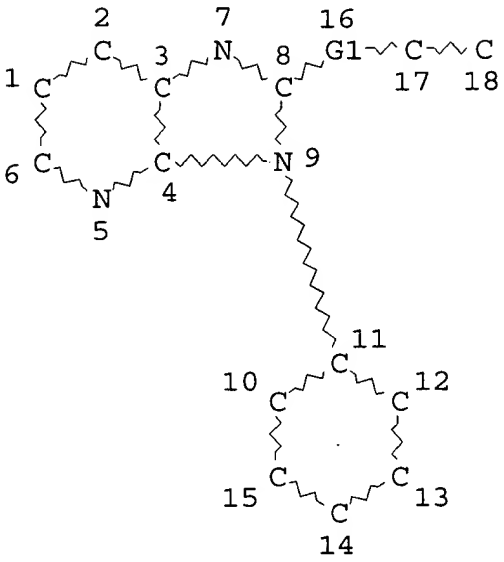
=> d l10 que stat
L7 STR



REP G1=(0-1) CY
NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 18

STEREO ATTRIBUTES: NONE
L10 365 SEA FILE=REGISTRY SSS FUL L7

100.0% PROCESSED 6290 ITERATIONS 365 ANSWERS
SEARCH TIME: 00.00.01

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=> d l21 1 ibib abs hitstr hitind

L21 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2002:354001 HCAPLUS
DOCUMENT NUMBER: 136:377202
TITLE: **Light-emitting** device and

material therefor

INVENTOR(S): Okada, Hisashi; Ise, Toshihiro; Mishima, Masayuki; Taguchi, Toshiki
PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan

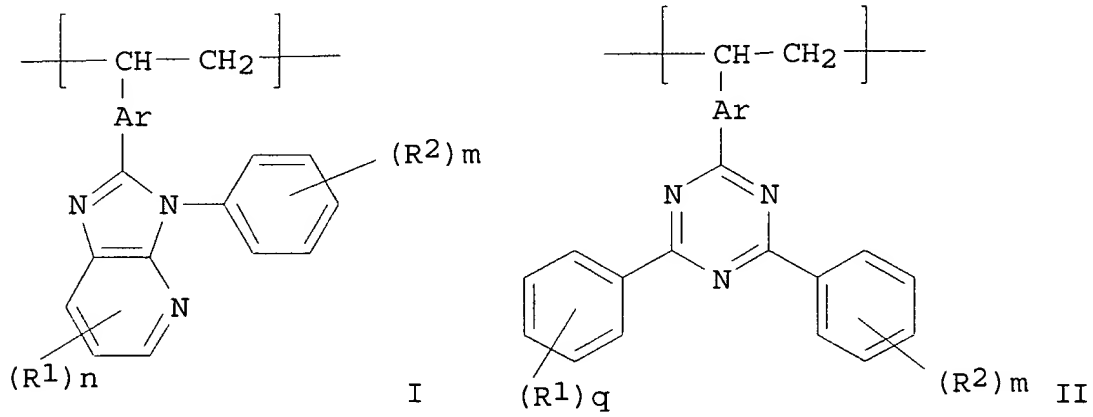
SOURCE: U.S. Pat. Appl. Publ., 91 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2002055014	A1	20020509	US 2001-935711	20010824
JP 2002319491	A2	20021031	JP 2001-236419	20010803

PRIORITY APPLN. INFO.: JP 2000-254171 A 20000824
JP 2001-38718 A 20010215
JP 2001-236419 A 20010803

OTHER SOURCE(S): MARPAT 136:377202

GI



AB **Light-emitting** devices comprising a pair of electrodes formed on a substrate and org. compd. layers comprising a **light-emitting** layer provided in between the electrodes are described in which .gtoreq.1 of the org. compd. layers comprises a heterocyclic compd. having .gtoreq.2 atoms and a **phosphorescent** compd.; polymers with repeating units described by the general formulas I and II (Ar = arylene or divalent heterocyclic group; R1 and R2 = independently selected H or substituent; n = 0-3; q = 0-5; and m = 0-5), which may be employed as the heterocyclic compds. in the devices, are also described. The devices may also employ polymers of heterocyclic compds. from which AR is absent. The **phosphoresc nt** compd. may be an org.

metal complex.

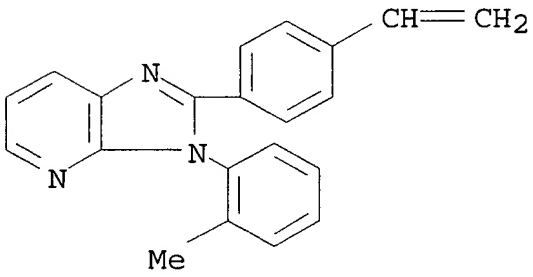
IT **422574-58-1 422574-62-7 422574-68-3**
422574-74-1 422574-78-5
(**light-emitting** devices with emitting layers including heterocyclic compds. and **phosphorescent** materials and heterocycle deriv. polymers for them)

RN 422574-58-1 HCAPLUS

CN 3H-Imidazo[4,5-b]pyridine, 2-(4-ethenylphenyl)-3-(2-methylphenyl)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 422574-57-0
CMF C21 H17 N3

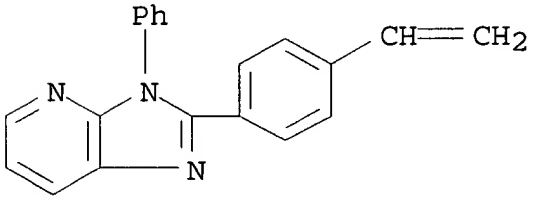


RN 422574-62-7 HCAPLUS

CN 9H-Carbazole, 9-ethenyl-, polymer with 2-(4-ethenylphenyl)-3-phenyl-3H-imidazo[4,5-b]pyridine (9CI) (CA INDEX NAME)

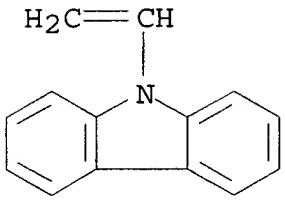
CM 1

CRN 422574-61-6
CMF C20 H15 N3



CM 2

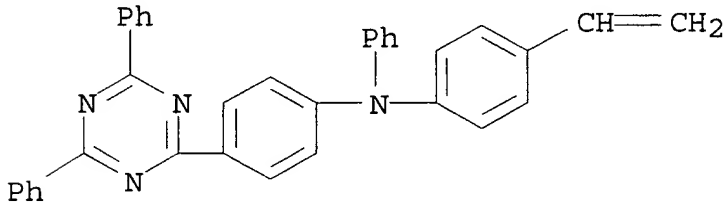
CRN 1484-13-5
CMF C14 H11 N



RN 422574-68-3 HCAPLUS
CN Benzenamine, 4-(4,6-diphenyl-1,3,5-triazin-2-yl)-N-(4-ethenylphenyl)-N-phenyl-, polymer with 2-(4-ethenylphenyl)-3-phenyl-3H-imidazo[4,5-b]pyridine (9CI) (CA INDEX NAME)

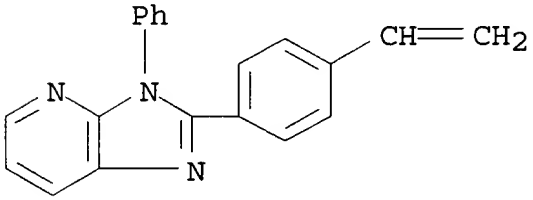
CM 1

CRN 422574-65-0
CMF C35 H26 N4



CM 2

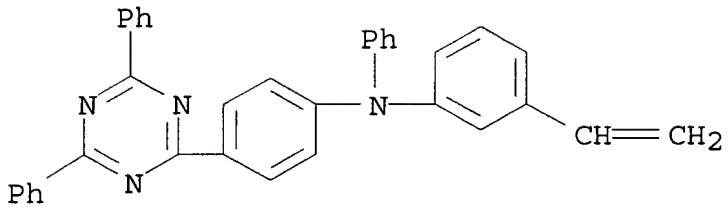
CRN 422574-61-6
CMF C20 H15 N3



RN 422574-74-1 HCAPLUS
CN Benzenamine, N-[4-(4,6-diphenyl-1,3,5-triazin-2-yl)phenyl]-3-ethenyl-N-phenyl-, polymer with 2-(4-ethenylphenyl)-3-phenyl-3H-imidazo[4,5-b]pyridine (9CI) (CA INDEX NAME)

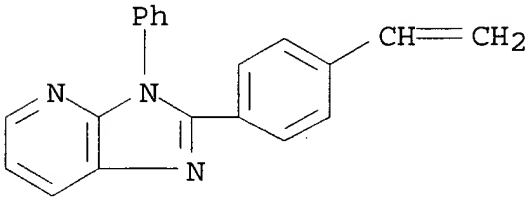
CM 1

CRN 422574-71-8
CMF C35 H26 N4



CM 2

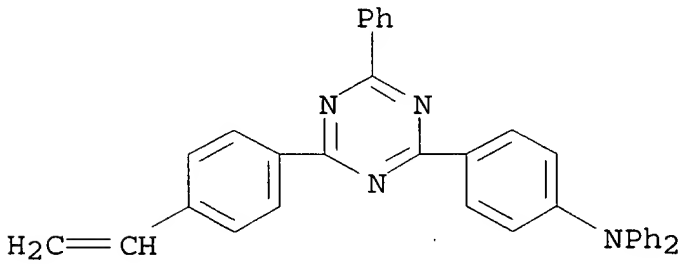
CRN 422574-61-6
CMF C20 H15 N3



RN 422574-78-5 HCAPLUS
CN Benzenamine, 4-[4-(4-ethenylphenyl)-6-phenyl-1,3,5-triazin-2-yl]-N,N-diphenyl-, polymer with 2-(4-ethenylphenyl)-3-phenyl-3H-imidazo[4,5-b]pyridine (9CI) (CA INDEX NAME)

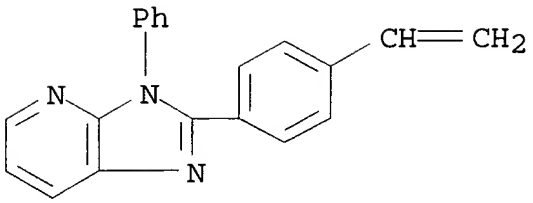
CM 1

CRN 422574-75-2
CMF C35 H26 N4



CM 2

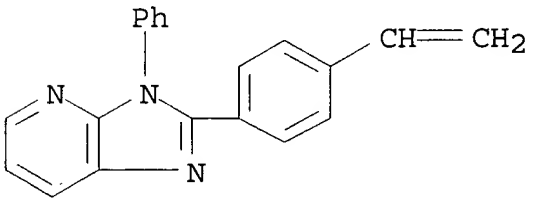
CRN 422574-61-6
CMF C20 H15 N3



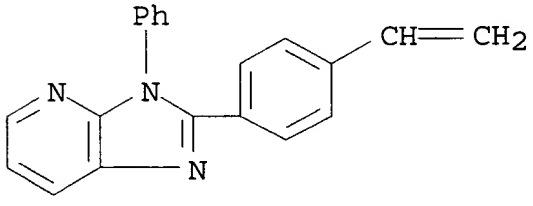
IT **422574-83-2P**
(**light-emitting** devices with emitting layers including heterocyclic compds. and **phosphorescent** materials and heterocycle deriv. polymers for them)
RN 422574-83-2 HCAPLUS
CN 3H-Imidazo[4,5-b]pyridine, 2-(4-ethenylphenyl)-3-phenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 422574-61-6
CMF C20 H15 N3



IT **422574-61-6P**
(**light-emitting** devices with emitting layers including heterocyclic compds. and **phosphorescent** materials and heterocycle deriv. polymers for them)
RN 422574-61-6 HCAPLUS
CN 3H-Imidazo[4,5-b]pyridine, 2-(4-ethenylphenyl)-3-phenyl- (9CI) (CA INDEX NAME)



IC ICM H05B033-14
ICS C08F026-06
NCL 428690000

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 27, 28, 38, 76

ST **electroluminescent** device heterocycle
phosphorescent compd mixt active layer; polymer heterocycle
phosphorescent compd mixt active layer
electroluminescent device

IT **Phosphorescent** substances
(**light-emitting** devices with emitting layers including heterocyclic compds. and **phosphorescent** materials and heterocycle deriv. polymers for them)

IT Polycarbonates, uses
(**light-emitting** devices with emitting layers including heterocyclic compds. and **phosphorescent** materials and heterocycle deriv. polymers for them)

IT **Electroluminescent** devices
(org.; **light-emitting** devices with emitting layers including heterocyclic compds. and **phosphorescent** materials and heterocycle deriv. polymers for them)

IT 147-14-8, Copper phthalocyanine 2085-33-8, Tris(8-hydroxyquinolinato)aluminum 4733-39-5, Bathocuproine 7429-90-5, Aluminum, uses 7789-24-4, Lithium fluoride, uses 12033-89-5, Silicon nitride, uses 15082-28-7 24964-91-8, Tris(4-bromophenyl)aminium hexachloroantimonate 25067-59-8, Poly(N-vinylcarbazole) 37271-44-6 38215-36-0, Coumarin-6 50926-11-9, ITO 51269-91-1 58328-31-7 65181-78-4, N,N'-Bis(3-methylphenyl)-N,N'-diphenylbenzidine 94928-86-6 153838-48-3 173394-18-8 182069-71-2 343978-78-9 350025-75-1 350025-76-2 350025-78-4 350025-79-5 359014-69-0 370878-69-6 377092-13-2 422574-54-7, Silicon nitride oxide (SiN0.3O0.7) **422574-58-1** 422574-60-5 **422574-62-7** 422574-66-1 422574-67-2 **422574-68-3** 422574-70-7 422574-72-9 422574-73-0 **422574-74-1** 422574-76-3 422574-77-4 **422574-78-5** 422574-84-3 422574-85-4 422574-86-5 422574-87-6 422574-88-7 422574-89-8 422574-90-1 423117-91-3 423117-92-4 423117-94-6 423117-96-8 423117-97-9 423117-99-1 423118-00-7 423118-01-8 423118-03-0 423118-05-2 423721-05-5 423721-07-7 423721-09-9
(**light-emitting** devices with emitting layers including heterocyclic compds. and **phosphorescent** materials and heterocycle deriv. polymers for them)

IT 313950-73-1P 328238-10-4P 358974-66-0P 377092-02-9P 377092-06-3P 377092-10-9P 422574-56-9P 422574-64-9P **422574-83-2P**
(**light-emitting** devices with emitting layers including heterocyclic compds. and **phosphorescent** materials and heterocycle deriv. polymers for them)

IT 62-53-3, Aniline, reactions 95-53-4, o-Toluidine, reactions 104-15-4, p-Toluenesulfonic acid, reactions 108-44-1, m-Toluidine, reactions 578-66-5, 8-Aminoquinoline 586-75-4, 4-Bromobenzoyl chloride 603-35-0, Triphenylphosphine, reactions 769-92-6 876-08-4, 4-Chloromethylbenzoyl chloride 2039-82-9, 4-Bromostyrene

2156-04-9, 4-Vinylphenylboronic acid 2351-37-3, 4,4'-Biphenyldicarbonyl chloride 3842-55-5, 2-Chloro-4,6-diphenyl-1,3,5-triazine 4422-95-1, 1,3,5-Benzenetricarbonyl trichloride 5470-18-8, 2-Chloro-3-nitropyridine
(**light-emitting** devices with emitting layers including heterocyclic compds. and **phosphorescent** materials and heterocycle deriv. polymers for them)

IT 34949-41-2P 54696-64-9P 54696-67-2P 78750-58-0P 350025-73-9P 350025-74-0P 377092-01-8P 377092-03-0P 377092-04-1P 377092-05-2P 377092-07-4P 377092-08-5P 422574-55-8P **422574-61-6P** 422574-63-8P 422574-79-6P 422574-80-9P 422574-81-0P 422574-82-1P
(**light-emitting** devices with emitting layers including heterocyclic compds. and **phosphorescent** materials and heterocycle deriv. polymers for them)

IT 50851-57-5
(polyethylene dioxythiophene doped with; **light-emitting** devices with emitting layers including heterocyclic compds. and **phosphorescent** materials and heterocycle deriv. polymers for them)

IT 126213-51-2, Poly(3,4-ethylenedioxythiophene)
(polystyrene sulfonate-doped; **light-emitting** devices with emitting layers including heterocyclic compds. and **phosphorescent** materials and heterocycle deriv. polymers for them)